

STUDIES IN THE CARYOPHYLLACEAE—IV

A SYNOPSIS OF THE NORTH AMERICAN SPECIES OF THE  
SUBFAMILY SILENOIDEAE<sup>1</sup>

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IN a further review of materials in the *Caryophyllaceae*, it has become necessary to re-examine and re-assess certain complex genera with the aid of more recently collected specimens, and in the light of recent works of a number of critical students.

It is proposed here to list the categories recognized at this time, and to offer with some comment new names and arrangements that seem necessary. Adequate material and field-observations are yet insufficient, and experimental data almost completely lacking; therefore more satisfactory interpretation of boreal groups must await further field study and collection, even beyond the extensive work of J. P. Anderson, Fernald, Hultén, Polunin, A. E. Porsild, Raup and others.

KEY TO THE GENERA

- 1. Styles 5 (in some species occasionally 4, but predominantly 5).
  - 2. Sepal-lobes much shorter than the tube; petals appendaged. . . . . 1. *Lychnis*.
  - 2. Sepal-lobes much exceeding the tube; petals not appendaged. . . . . 2. *Agrostemma*.
- 1. Styles 3 (in some species occasionally 4, but predominantly 3). . . . . 3. *Silene*.
- 1. Styles 2.
  - 3. Calyx ebracteate.
    - 4. Stamens 10; calyx more than 2 mm. broad.
      - 5. Flowers 2 cm. or more long.
        - 6. Calyx tubular, 20-nerved; petals appendaged. . . . . 4. *Saponaria*.
        - 6. Calyx ovoid, strongly wing-angled, 5-costate; petals not appendaged. . . . . 5. *Vaccaria*.
      - 5. Flowers 1 cm. or less long. . . . . 6. *Gypsophila*.
    - 4. Stamens 5; calyx narrowly cylindrical, 1 mm. or less broad. . . . . 7. *Velezia*.
  - 3. Calyx subtended by 1–3 pairs of bracts.
    - 7. Calyx 30–40-nerved. . . . . 8. *Dianthus*.
    - 7. Calyx 5-ribbed or 15-nerved. . . . . 9. *Tunica*.

1. LYCHNIS L. Sp. Pl. ed. 1. 436. 1753; Gen. ed. 5, no. 517, 198. 1754.

The writer can adduce no new evidence to lend persuasion in the already long-held and extensive discussions that have engaged consideration of generic limitations in the *Silene-Lychnis* com-

<sup>1</sup> For a revision of the North American species of *Silene* see: C. L. Hitchcock & Bassett Maguire, Univ. Wash. Pub. Biol. 13: 1–73. 1947.

plex of the *Silenoideae*. He is compelled by reason of lack of significant or consistent characterization to reject the name *Melandrium* as it has so frequently been applied to segments of both the more natural population assemblages, *Silene* and *Lychnis*. In this respect he follows the long line of eminent students of American botany, Gray, Watson, Robinson, Fernald and Polunin, who have given detailed study to the family.

## KEY TO THE SPECIES

1. Capsular dissepiments prominent.
  2. Stems 0.5–3.0 dm. tall; cauline leaves lacking; plants of eastern boreal America and Greenland. . . . . 1. *L. alpina*.
  2. Stems 3.0–8.0 dm. tall; cauline leaves usually 2–4 pairs; occasional weed of northeastern United States. . . . . 2. *L. Viscaria*.
1. Capsular dissepiments completely obsolete, or represented merely by inconspicuous basal ridges.
  2. Plants variously pubescent, but not tomentose; calyx-lobes plane.
    3. Principal leaves 0.5–1.5 cm. wide; cauline leaves 4 pairs or fewer; stems not leafy.
      4. Flowers few (1–9); inflorescence not paniculate.
        5. Flowers nodding in anthesis; petals included or barely exerted; calyx usually conspicuously inflated at maturity; seed wing-margined. . . . . 3. *L. apetala*.
        5. Flowers erect in anthesis; petals included, barely exerted, or conspicuously exerted; seed wing-margined or wingless.
          6. Calyx somewhat inflated; stems 5–30 cm. tall; plants of arctic, boreal, or alpine habitats.
            7. Petals conspicuously exerted by 3–10 mm.; arctic or boreal.
              8. Seed wing-margined; stems more or less strongly pubescent, not subpilose; 1-flowered or occasionally loosely 3 (5)-flowered. . . . 4. *L. furcata*.
              8. Seed wingless; stems subpilose or in ssp. *Dawsoni* more or less strongly pubescent; cymes closely 3–5 (rarely 1)-flowered. . . . . 5. *L. triflora*.
            7. Petals inconspicuously exerted by 1–3 mm.; alpine plants of central or southern Rocky Mountains. . . . . 6. *L. Kingii*.
          6. Calyx closely investing the capsule; stems 30–60 cm. tall; plants of austral montane habitats.
            7. Calyx-lobes merely puberulent; stems uniformly finely puberulent, becoming glandular in the inflorescence; plants of western United States and Canada. . . . . 7. *L. Drummondii*.
            7. Calyx-lobes densely lanate; stems, at least above, more or less lanately pubescent, non-glandular in the inflorescence; plants of Mexico. . . . . 8. *L. mexicana*.
        4. Flowers many; inflorescence openly paniculate. . . 11. *L. Flos-cuculi*.
    3. Principal leaves 1.5–4.0 cm. wide; cauline leaves 5 pairs or more; stems leafy; flowers numerous.
      4. Calyx much inflated; inflorescence not congested.
        5. Flowers white; opening in the evening. . . . . 8. *L. alba*.

- 5. Flowers red; opening in the morning . . . . . 9. *L. dioica*.
- 4. Calyx not inflated.
  - 5. Inflorescence congested . . . . . 10. *L. chalcedonica*.
  - 5. Inflorescence openly paniculate . . . . . 11. *L. Flos-cuculi*.
- 2. Plants densely tomentose; calyx-lobes twisted . . . . . 12. *L. coronaria*.

1. LYCHNIS ALPINA L. Sp. Pl. ed. 1. 436. 1753. *Viscaria alpina* (L.) G. Don, Gen. Syst. 1: 415. 1831. *L. alpina* L. var. *americana* Fern. RHODORA 42: 259. 1940. *L. alpina* L. var. *americana* Fern. forma *albiflora* (Lange) Fern. RHODORA 42: 259. 1940.

DISTRIBUTION: A uniform population, mostly of "poorly vegetated areas of well-drained but damp, sandy soil." Boreal western Siberia, Europe, to 70° N. in Greenland, and North America in Labrador, Newfoundland, Gaspé, and the west shore of James Bay, Quebec.

2. LYCHNIS VISCARIA L. Sp. Pl. ed. 1. 436. 1753. *Viscaria vulgaris* Roehl. Deutsch. Fl. 2: 275. 1812.

DISTRIBUTION: Cultivated; introduced from Europe, occasionally escaping and apparently rarely persisting as a weed. Maine to New York.

3. LYCHNIS APETALA L. Sp. Pl. ed. 1. 437. 1753.

KEY TO THE SUBSPECIES

- 1. Calyx conspicuously inflated; 1 (rarely 2-3)-flowered; plants of the arctic regions, ranging south more or less to the 60th parallel . . . . . 3a. *L. apetala* subsp. *apetala*.
- 1. Calyx not conspicuously inflated; 1-3 (5)-flowered; plants of the Rocky Mountains, ranging from more or less the 60th parallel, south.
  - 2. Stems lanate-pilose; leaves narrowly oblanceolate or linear . . . . . 3b. *L. apetala* subsp. *attenuata*.
  - 2. Stems puberulent; leaves usually oblanceolate . . . . . 3c. *L. apetala* subsp. *montana*.

3a. LYCHNIS APETALA L. subsp. **apetala**. *L. apetala* L. Sp. Pl. ed. 1. 437. 1753. *Melandrium apetalum* (L.) Fenzl in Ledeb. Fl. Ross. 1: 326. 1842. *Wahlbergella apetalata* (L.) Fries, Summa Veg. Scand. 155. 1845. *W. apetalata* (L.) Fries,  $\beta$  *arctica* Fries in Öfvers. Vet. Akad. Förhandl. 133. 1869. *L. nesophila* Holm in Fedde, Rep. Spec. Nov. 3: 338. 1907. *M. macrospermum* A. E. Porsild, RHODORA 41: 225. 1939. *L. apetala* L. forma *arctica* (Fries) Polunin, Bull. Nat. Mus. Can. no. 92. 184. 1940. *M. apetalum* (L.) Fenzl, ssp. *arcticum* (Fries) Hultén, Fl. Alaska and Yukon 700. 1943.

TYPE LOCALITY: "Habitat in Alpibus Lapponicis, Sibiricis."

DISTRIBUTION: Greatly polymorphic, the exserted petal (forma *arctica*) character seemingly to be correlated with the proterandrous condition; plants of moist habitat; circumpolar; in North America the islands of the Bering Straits, the Aleutian Islands, Alaska, Yukon Territory eastward through arctic

Canada, the Canadian Archipelago (Grant Land 82° 27' N.), the Hudson Straits region, Labrador, and Greenland (here reaching 83° 6' N. *Ostenfeld*).

3b. *L. APETALA* L. var. *GLABRA* Regel, Bull. Mosc. **34**<sup>2</sup>: 570. 1861. Totally glabrous, but otherwise exhibiting the polymorphy of the subspecies; an infrequent variant of no geographical segregation.

TYPE LOCALITY: "Im Felsengebirgern Nordamerika." Type probably the *E. Bourgeau* "Rocky Mountains 1858" collection of the Palliser's Brit. N. Am. Expl. Expedition (? ISOTYPES at Gray Herbarium and New York Botanical Garden).

3b. *L. APETALA* L. subsp. **attenuata** (Farr) Maguire, comb. nov. *L. attenuata* Farr, Trans. & Proc. Bot. Soc. Penna. **1**:419. 1904.

TYPE LOCALITY: "Lake Louise, near Laggan, July 16, 1904," *E. M. Farr* (University of Pennsylvania).

DISTRIBUTION: Higher altitudes in the Canadian Rocky Mountains, British Columbia and Alberta, Mount Selwyn (56° 1' N.) south to the Elbow River (49° 40' N.).

3c. *L. APETALA* L. subsp. **montana** (S. Wats.) Maguire, comb. nov. *L. montana* S. Wats. Proc. Am. Acad. **12**: 247. 1877.

TYPE LOCALITY: "Mountain peaks of Colorado, (n. 132 Parry)" (Gray Herbarium).

DISTRIBUTION: Meadows and tundra about timber-line, Rocky Mountains, Montana south into Colorado, the Uinta and La Sal Mountains, Utah.

#### MELANDRIUM MACROSPERMUM AND M. SOCZAVIANUM

For more than a hundred years four species of *Lychnis* had been widely known from arctic America and Greenland, for the greater part polymorphous and variable. Of these *L. alpina*, confined to Greenland and adjacent North America in our range, with almost complete capsular dissepimentation, has never been confused with the other more extensively distributed species having little or no capsular partition, viz.: *L. apetala*, *L. furcata*, and *L. triflora*. Of these, *L. triflora*, itself polymorphous with wingless seed and agglomerate inflorescence, is easily separable from *L. apetala* and *L. furcata* with winged seed and but a single flower, or several flowers in an open inflorescence. It is the latter two species and possible relatives that are concerned in the immediate consideration.

*Lychnis apetala*, completely circumpolar and quite variable, is characterized essentially by its included or shortly exerted lilac-colored, or sometimes white petals, its membranous and finally inflated calyx, its large more or less reniform margined seed with

inflated testa, and most conspicuously by its nodding young flowers that become erect at maturity. Hultén (Fl. Alaska and Yukon 701. 1943) reports, however, particularly in Scandinavia, that the flowers may at times be erect.

*Lychnis furcata*, likewise, is circumpolar and exceedingly variable, but in contrast to *L. apetala*, has conspicuous white, pink, or reddish petals, flowers erect through anthesis, calyx that more often is firmer, although frequently becoming membranous and inflated, and smaller, inflated, margined seed. Habitally these two species are similar, *L. furcata* commonly becoming somewhat larger than *L. apetala*.

It is thus obvious that at maturity the two species are difficult of separation, the not always dependable seed-differences being the only means of identification. In addition, there are many intermediate plants suggesting frequent hybridization, this possibility gaining credence by Polunin's observations of *L. affinis* (Bull. Nat. Mus. Can. No. 92. pp. 181 and 184. 1940).

Two additional entities have now been recognized for our area that seem to come within the limits of characterization given for (or actually to combine characters of) *L. apetala* and *L. furcata*, viz. *Melandrium macrospermum* A. E. Porsild, and *M. Soczavianum* Schischk., the latter attributed to Alaska by Hultén by two collections, *Anderson 3502* and *3700*, both of which I have before me.

*M. macrospermum* had been known to Porsild only from the type collection (*A. E. and R. T. Porsild 1147*), distinguished by him from *L. apetala* largely by its "pubescent, urceolate" (the quotations those of Porsild) calyx, as against a "thin, papery, dark purple, puberulent, glutinous, almost globular" calyx; "flower 1 or 2, lateral, long peduncled," as against "flowers solitary (very rarely two), nodding throughout anthesis and erect only when capsule is mature"; and "petals pale rose" as against "petals purple" for *L. apetala*. While admittedly there may be a general "look" in the field that sets the two populations apart, from characters that appear in herbarium-specimens, I am unable to see that *M. macrospermum* so circumscribed does not well come into the limits of *L. apetala*.

Hultén admits *M. macrospermum* to the Flora of Alaska and Yukon, citing a number of collections, among them *Anderson*

5087. This specimen is a good match for *A. E. and R. T. Porsild 988*, likewise from Alaska, distributed as *M. apetalum*.

The two Anderson Alaskan collections cited by Hultén as *M. Soczavianum* are low-growing plants in early anthesis, with nodding heads. They appear to me to be *L. apetalum*, but with exerted petals, or to be immature specimens of *L. furcata* with nodding heads. Hultén suggests that these plants might actually be identical with *M. macrospermum*, or indeed might represent an altogether new species.

The writer cannot bring himself to interpret these two collections as belonging to a species distinct from *L. furcata* or *L. apetalum* merely on the basis of the combination of characters of the two species, especially in view of the probably frequent hybridization between them.

From the above consideration it becomes necessary to consider *M. macrospermum* to be a part of *L. apetalum*, and the American specimens referred to *M. Soczavianum* must be considered as intermediate between *L. apetalum* and *L. furcata*.

In the following table attempt has been made to offer comparable and contrastive characters available for the four names discussed.

#### 4. LYCHNIS FURCATA<sup>2</sup> (Raf.) Fernald, RHODORA **34**: 22. 1932.

##### KEY TO THE SUBSPECIES

1. Mature calyx (10) 11–15 mm. long; seed 1.0–1.2 (1.5) mm. broad; plants of Greenland and Arctic America 4a. *L. furcata* subsp. *furcata*.
1. Mature calyx (8) 10–12 (14) mm. long; seed 1.2–1.5 mm. broad; plants of Alaska, Yukon and the western Hudson Bay region . . . . . 4b. *L. furcata* subsp. *elatior*.

#### 4a. LYCHNIS FURCATA (Raf.) Fernald, subsp. **furcata**.

*Silene furcata* Raf. *Autikon Botanikon*, 28. 1940. *Lychnis furcata* (Raf.) Fern. RHODORA **34**: 22, in large part. 1932. *L. affinis* J. Vahl ex Fries, Nov. Fl. Suec. Mantissa **3**: 36, as to Greenland reference. 1842. *Melandrium pauciflorum* (Ledeb.) Ostenf. Meddel. Grønland **64**: 173, as to Greenland plants. 1923.

If the Siberian *Lychnis pauciflora* Ledeb. Mém. Acad. Pétersb. **5**: 537. 1814, proves to be conspecific with plants interpreted here

<sup>2</sup> LYCHNIS FURCATA (Raf.) Fernald, subsp. **affinis** (J. Vahl) Maguire, comb. nov. *L. affinis* J. Vahl ex Fries, Nov. F. Suec. Mantissa **3**: 36, as to type and plants of arctic Europe and Siberia. 1842. *Wahlbergella angustiflora* Rupr. Fl. Samoied. 24, in part. 1843. *Melandrium furcatum* (Raf.) Hultén subsp. *angustiflorum* Hultén, hyponym, Fl. Alaska and Yukon 703. 1943.

- | <i>L. apetala</i> ssp. <i>apetala</i>  | <i>M. macrospermum</i>   | <i>M. Soczavianum</i>   | <i>L. furcata</i>  |
|--|--|---|--|
| 1. Stems 5–15 (30) cm. tall.   | 1. Stems 15–25 cm. tall.   | 1. "Plant resembles <i>M. furcata</i> ."                        | 1. Stems 5–35 (40) cm. tall.   |
| 2. Flowers nodding in anthesis.  | 2. Flowers apparently not nodding in anthesis (but not specifically so stated by Porsild).                       | 2. Flowers "sometimes nodding."                                 | 2. Flowers erect in anthesis.  |
| 3. Calyx inflated, membranous, broadly elliptic-ovate to subglobose, 12–15 (18) mm. long; scantily or moderately pubescent with moniliform pigmented hairs, most densely so along the veins, sometimes completely glabrous, frequently viscid.                   | 3. Calyx "urnshaped" 1.5 cm. long, 1.0 cm. wide, "pubescent."  | 3. Calyx elliptic-ovoid 10–12 mm. long, (immature), sub-pilose. | 3. Calyx 10–16 mm. long, elliptic-ovoid, sometimes becoming inflated and membranous at maturity, moderately puberulent and sometimes glandular, to densely pilose with moniliform pigmented hairs, and viscid, rarely completely glabrous. |
| 4. Petals included or exserted by 1–3 mm., white or lilac-colored.   | 4. Petals "barely exserted, rose."   | 4. Petals "long and dark lilac colored instead of white."       | 4. Petals conspicuously exserted, white pinkish or red-dish.   |
| 5. Seed reniform-orbicular, 1.5–2.5 mm. broad, testa light brown, inflated, forming an inflated or collapsed winged margin equalling or somewhat less than the diameter, of the embryo; the surface with more or less conspicuous rounded or flattened papillae. | 5. Seed, "reniform, pale brown, 2.0–2.4 mm. wide and 1.8 mm. long, strongly punctate, with broad inflated wing." | 5. Seed unknown to the writer.                                  | 5. Seed 1.0–1.5 mm. broad, subreniform, the testa inflated, forming a winged margin, the surface almost smooth.  |

as *L. furcata* (so concluded by Prof. Ostenfeld), then the older epithet *pauciflorum* would supersede any other now applied to this diverse circumpolar entity.

TYPE LOCALITY: "Labrador and Hudson Bay." TYPE unknown.

DISTRIBUTION: Eastern Arctic America, northern Labrador, Greenland, Spitzbergen, and Nova Zembla.

4b. *LYCHNIS FURCATA* (Raf.) Fernald, subsp. **elator** (Regel) Maguire, comb. nov. *L. apetala* L. var. *elator* Regel, Bull. Mosc. 34<sup>4</sup>: 573, most part. 1861. *L. Taylorae* Robinson, Proc. Am. Acad. 28: 150. 1893. *Melandrium Taylorae* (Robins.) Tolm. Trav. Mus. Bot. Acad. Sc. U. R. S. S. 24: 267. 1932. *L. brachycalyx* Raup, Sargentia 6: 173. 1947.

The species *L. brachycalyx* as proposed by Dr. Raup, has been characterized as distinct from *L. furcata* essentially by its short calyx, which in the type (Colonel Mt. Brintnell Lake, S. W. Mackenzie, Raup 9821, stated to be "occasional in this situation but not seen elsewhere.") is "11.5 mm. crasso et 9 mm. alto", compared with *L. furcata* in which "the calyx is 9-12 mm. broad and 12-15 mm. high." No specimens of this have been seen by the writer. From the description and figure (l. c. p. 174), it would seem that the plants in question are closely similar to the following and with them may be associated with *L. furcata*. ssp. *elator*, viz.: Klondike River, July 15, 1902, John Macoun, Geol. Surv. Can. 58402; Churchill, July 26-Aug. 18, 1910, J. M. Macoun, Geol. Surv. Can. 79078; stream by West Dawson, July 30, 1899, R. S. Williams sine no.; and Peel River, Mackenzie River Delta, July 15, 1892, E. Taylor, the type of *Lychnis Taylorae*. These specimens with calyx from 8-12 mm. long and reduced petals have been interpreted as depauperate or etiolated plants.

TYPE LOCALITY: "Baicalien, am Flusse Bargusin (Turczaninoff). Russisches America in Kadjak. (Exp. d. Admiralität)."

DISTRIBUTION: Eastern Arctic Asia, Alaska, and Yukon, eastward to the Hudson Bay Region, Manitoba, and possibly along the Arctic coast. A more eastern collection that seemingly belongs here is, Lake Harbour, Baffin Island, Polunin 434 (Gray Herbarium).

*LYCHNIS FURCATA* subsp. *ELATOR* var. **glabra** (Hultén) Maguire, comb. nov. *L. Funstonii* Wight ex Mertie, U. S. Dept. Inter. Geol. Surv. Bull. 836-E: 364. 1932. Nomen. *Melandrium*



*Taylorae* (Robins.) Tolm. var. *glabrum* Hultén, Fl. Alaska and Yukon 4: 705. 1932.

TYPE LOCALITY: Coal Creek Hill, Central Yukon River, Alaska, *Funston* 81. ISOTYPE, New York Botanical Garden.

As suggested by the name, this plant is glabrous and seems to be no more than a glabrous form of the subsp. *elatior*. Other than the type, there seems to be no record of glabrous specimens of the subspecies within our range.

5. LYCHNIS TRIFLORA R. Br. in Ross' Voy. Disc. Append. 142. 1819.

KEY TO THE SUBSPECIES

1. Stems 5–15 (20) cm. tall, pubescence more or less densely sub-pilose; mature calyx 10–12 mm. long, ellipsoid-campanulate to campanulate; seed muriculate-tuberculate on the back; apparently confined to Greenland. . . . . 5a. *L. triflora* subsp. *triflora*.
1. Stems 15–30 cm. tall, villous or merely puberulent; mature calyx 8–10 mm. long, narrowly ellipsoid-campanulate; seed low-tuberculate on the back; Arctic Canada. . 5b. *L. triflora* subsp. *Dawsoni*.

5a. LYCHNIS TRIFLORA R. Br. subsp. **triflora**. *L. triflora* R. Br. in Ross' Voy. Disc. Append. 142. 1819.

TYPE LOCALITY: Greenland.

DISTRIBUTION: Apparently confined to Greenland (cf. A. E. Porsild, *Sargentia* 4: 36. 1943); possibly also "east coast of Baffin" (cf. Polunin, *Bot. Can. East. Arctic* 183. 1940).

5b. LYCHNIS TRIFLORA R. Br. subsp. **Dawsoni** (Robins.) Maguire, comb. nov. *L. triflora* R. Br. var. *Dawsoni* Robins. Proc. Am. Acad. 28: 149. 1893. ? *Melandryum taimyrense* A. Tolm. Trav. Bot. Mus. Acad. Sci. U. R. S. S. 24: 264. 1932. ? *M. Ostenfeldii* A. E. Porsild, *Sargentia* 4: 37. 1943. *L. Dawsonii* (Robins.) J. P. Anderson, *Iowa State College Journ. Sci.* 20: 251. 1946.

TYPE LOCALITY: 100 miles northeast of Dease Lake, British Columbia, *Dr. G. M. Dawson* (Gray Herbarium).

DISTRIBUTION: gravelly banks and rocky places, the region of Great Slave Lake and northward; Copper Center, Alaska, *Anderson* 2047.

In the proposal of *M. Ostenfeldii*, Porsild (l. c.) had unfortunately overlooked Robinson's *L. triflora* var. *Dawsoni*. The type of var. *Dawsoni* and *Dawson* 2649 from Dease River, lat. 59° N. quite faithfully fit into the description of *M. Ostenfeldii*. The subsp. *Dawsoni* may be specifically distinct from *L. triflora*.

6. LYCHNIS KINGII S. Wats. Proc. Am. Acad. 12: 247. 1877. *L. ajanensis* S. Wats. Bot. King's Expl. Exped. 5: 37. 1871, not *L. ajanensis* Regel, Bull. Soc. Nat. Mosc. 34<sup>2</sup>: 564. 1861.

TYPE LOCALITY: "Peaks of the Uintas at head of Bear River." Utah, *Parry 43* (Gray Herbarium).

DISTRIBUTION: Alpine regions, Rocky Mountains, Wyoming, Colorado and Utah.

7. LYCHNIS DRUMMONDII (Hook.) S. Wats. Bot. King's Expl. Exped. 5: 37. 1871.

KEY TO THE VARIETIES

1. Petals included. . . . . 7a. *L. Drummondii* var. *Drummondii*.  
 1. Petals exerted by 2-4 mm. . . . . 7b. *L. Drummondii* var. *striata*.

7a. LYCHNIS DRUMMONDII var. **Drummondii**. *L. Drummondii* (Hook.) S. Wats. Bot. King's Expl. Exped. 5: 37. 1871. *Silene Drummondii* Hook. Fl. Bor.-Am. 1: 89. 1830.

*Melandrium Drummondii* (Hook.) Hultén, Fl. Alaska and Yukon 4: 702. 1944.

TYPE LOCALITY: "Plains of the Saskatchewan. Dr. Richardson; Drummond. Common on . . . gravelly soils, near Fort Vancouver, and skirting the Blue Mountains. Douglas."

DISTRIBUTION: Open montane slopes and woodlands, to 11,000 feet; Northwest Territory and British Columbia to Saskatchewan and North Dakota to Washington?, western Nebraska, Colorado, northern Arizona and southern Nevada.

7b. LYCHNIS DRUMMONDII var. **striata** (Rydb.) Maguire, comb. nov. *L. striata* Rydb. Bull. Torrey Club 31: 408. 1904. *L. Drummondii* (Hook.) S. Wats. var. *nuda* Maguire, Madroño 6: 26. 1941, not *L. nuda* S. Wats. Bot. King's Expl. Exped. 5: 37. 1871.

Similar to the var. *Drummondii* but with exerted petals.

TYPE LOCALITY: Cameron Pass, Colorado, 1896, C. F. Baker (New York Botanical Garden).

DISTRIBUTION: Occurring with the typical population, and seemingly mostly confined to the center of distribution in Wyoming, Idaho, Utah, and Colorado. Possibly not varietally distinct.

8. LYCHNIS MEXICANA Rose, Contr. U. S. Nat. Herb. 5: 141. 1897.

Apparently known only by two collections, the TYPES: Sierra de Ajusco, altitude 3,215 meters, 1896, C. G. Pringle 6456; and Lava beds, La Cima de Ajusco, 9800 feet, Aug. 2, 1906, Pringle 13774. Both specimens have stems that are nearly glabrous at the base, and very thinly lanate towards the summit.

9. LYCHNIS ALBA Mill. Gard. Dict. ed. 8. no. 4. 1768. *L. vespertina* Sibth. Fl. Oxon. 146. 1794. *Melandrium vespertinum* (Sibth.) Fries, Bot. Notiser 170. 1842.

DISTRIBUTION: A weedy species naturalized from Europe, frequent in eastern North America; from Nova Scotia and Quebec to Michigan and Washington, southward to California,

Utah, Missouri and Georgia, perhaps the distribution more extended. Frequently confused with *Silene noctiflora*.

10. *LYCHNIS DIOICA* L. Sp. Pl. ed. 1. 437. 1753. *L. dioica* var. *rubra* Weigel, Fl. Pom.-Rug. 85. 1769. *L. diurna* Sibth. Fl. Oxon. 145. 1794.

DISTRIBUTION: Introduced from Europe, occurring as a weed in eastern North America; Newfoundland, Nova Scotia, Quebec, Ontario and Minnesota, south to Virginia and Missouri.

11. *LYCHNIS CHALCEDONICA* L. Sp. Pl. ed. 1. 436. 1753. Genotype. *Agrostemma chalcedonica* (L.) Döll, Rhein. Fl. 643. 1843.

DISTRIBUTION: Introduced into cultivation from Asia; in America escaped and now occasionally spontaneous in the Northeast, from Prince Edward Island and Maine to Michigan, probably elsewhere.

12. *LYCHNIS FLOS-CUCULI* L. Sp. Pl. ed. 1. 436. 1753. *Melandrium Flos-cuculi* (L.) Roehl. Deutschl. Fl. ed. 2. 275. 1812. *Coronaria Flos-cuculi* (L.) A. Br. in Flora 26: 368. 1843.

DISTRIBUTION: Of European origin, escaped from cultivation and frequently naturalized; waste places, Quebec, New Brunswick, New England and New York.

13. *LYCHNIS CORONARIA* (L.) Desr. in Lam. Encycl. 3: 643. 1789. *Agrostemma coronaria* L. Sp. Pl. ed. 1. 436. 1753. *Coronaria tomentosa* A. Br. in Flora. 26: 368. 1843.

DISTRIBUTION: Of European origin, frequently escaped from cultivation and now apparently established in many areas; Maine, Vermont, Massachusetts, New York, Ohio, Indiana, British Columbia, Washington, Oregon, and probably elsewhere.

2. *AGROSTEMMA* L. Sp. Pl. ed. 1. 435. 1753;  
Gen. ed. 5, 198. 1754.

1. *AGROSTEMMA GITHAGO* L. Sp. Pl. ed. 1. 435. 1753. *Lychnis Githago* Scop. Fl. Carn. ed. 2. 1: 310. 1772.

DISTRIBUTION: Middle and southern Europe; introduced and widely established as a weed of grain fields, roadsides and waste places in much of temperate North America.

3. *SILENE* L. Sp. Pl. ed. 1. 416. 1753.

For a revision of the North American species of *Silene* see: Hitchcock and Maguire, Pub. Wash. Univ. Biol. 13: 1-73. 1947.

4. *SAPONARIA* L. Sp. Pl. ed. 1. 408. 1753; Gen. ed. 5. 191. 1754.

1. *SAPONARIA OFFICINALIS* L. Sp. Pl. ed. 1. 408. 1753.

DISTRIBUTION: Of Old World origin; common in cultivation and frequently escaped, easily becoming spontaneous along roadsides and in waste places, spreading by rootstalks. To be found in most of temperate North America.

## 5. VACCARIA Medic. Phil. Bot. 1: 96. 1789.

1. VACCARIA SEGETALIS (Neck.) Garcke ex Aschers. Fl. Brandenb. 1: 84. 1864. *Saponaria segetalis* Neck. Delic. Gallo-Belg. 1: 194. 1768. *Vaccaria pyramidata* Medic. Phil. Bot. 1: 96. 1789. *Saponaria Vaccaria* L. Sp. Pl. ed. 1. 409. 1753. *Vaccaria Vaccaria* (L.) Britt. in Britt. & Brown Ill. Fl. 2: 18. 1897.

DISTRIBUTION: Of European origin; a weed largely throughout temperate North America, as far north as Alaska. Frequently abundant in grain fields.

## 6. GYPSOPHILA L. Sp. Pl. ed. 1. 406. 1753. Gen. ed. 5, 191. 1754.

## KEY TO THE SPECIES

1. Annual; diffuse, the stems 1.0–1.5 dm. tall; flowers axillary . . . 1. *G. muralis*.  
 1. Perennial or annual; the stems 2 or more dm. tall; inflorescences paniculate.  
 2. Calyx 2.0–2.5 mm. long; petals 5 mm. or less long . . . . . 2. *G. paniculata*.  
 2. Calyx 4–5 mm. long; petals ca. 10 mm. long . . . . . 3. *G. elegans*.

## 1. GYPSOPHILA MURALIS L. Sp. Pl. ed. 1. 408. 1753.

DISTRIBUTION: Widely distributed in Eurasia; established locally as a weed in New England, Michigan and Minnesota.

## 2. GYPSOPHILA PANICULATA L. Sp. Pl. ed. 1. 407. 1753.

DISTRIBUTION: Middle and southern Europe to western Siberia; escaped from cultivation and locally established in Manitoba and Nebraska, perhaps elsewhere.

## 3. GYPSOPHILA ELEGANS Bieb. Fl. Taur. Cauc. 1: 319. 1808.

DISTRIBUTION: Caucasia, Armenia, and the upper Euphrates region; reportedly escaped from cultivation and established in North Dakota.

## 7. VELEZIA L. Sp. Pl. ed. 1. 332. 1753; Gen. ed. 5, 155. 1754.

## 1. VELEZIA RIGIDA L. Sp. Pl. ed. 1. 332. 1753.

DISTRIBUTION: Southern Europe, and the Mediterranean area; in North America established as a weed from northern to central California.

## 8. DIANTHUS L. Sp. Pl. ed. 1. 409. 1753; Syst. ed. 1. 710. 1753; Gen. ed. 5, 191. 1754.

## KEY TO THE SPECIES

1. Flowers solitary or few.  
 2. Rootstalk slender, branched; stems slender, branched; calyx 12–15 mm. long . . . . . 1. *D. deltoides*.  
 2. Rootstalk coarse or the caudex multicapital.  
 3. Leaves mostly basal; stems mostly 2–3 dm. tall; infrequent weed in New England . . . . . 2. *D. plumarius*.  
 3. Leaves not conspicuously basal; stems mostly 1 dm. or less tall; indigenous to Alaska . . . . . 3. *D. repens*.  
 1. Flowers many in a congested inflorescence.  
 4. Perennial; leaves 10–18 mm. broad . . . . . 4. *D. barbatus*.  
 4. Biennial; leaves 2–8 mm. broad . . . . . 5. *D. Armeria*.

1. DIANTHUS DELTOIDES L. Sp. Pl. ed. 1. 411. 1753.

DISTRIBUTION: Introduced from Europe; locally established as a weed, New Hampshire and Vermont to New York.

2. DIANTHUS PLUMARIUS L. Sp. Pl. ed. 1. 411. 1753.

DISTRIBUTION: Central and southeastern Europe; escaped from cultivation and established locally in New Hampshire and Massachusetts.

3. DIANTHUS REPENS Willd. Sp. Pl. 2: 681. 1799. *D. alpinus* *v repens* (Willd.) Regel, Bull. Mosc. 34<sup>4</sup>: 530. 1861.

DISTRIBUTION: Arctic Europe and Siberia; Bering Straits; in Alaska from Cape Lisburne and the central Yukon south to Lake Tustumena.

4. DIANTHUS BARBATUS L. Sp. Pl. ed. 1. 409. 1753. Genotype. *Diosanthos barbatum* St. Lager. Fl. Pyr. 3: 93. 1901.

DISTRIBUTION: Escaped from cultivation, locally established from Vermont to Michigan, south to New York.

5. DIANTHUS ARMERIA L. Sp. Pl. ed. 1. 410. 1753. *Diosanthus Armerium* St. Lager, Ann. Soc. Bot. Lyon, 7: 87. 1880.

DISTRIBUTION: Introduced from Europe; spontaneous as a weed, Quebec and Ontario to Montana, Idaho, British Columbia and Washington, south to Missouri to Georgia.

9. TUNICA Scop. Fl. Carn. ed. 2. 1: 298. 1772.

KEY TO THE SPECIES

- 1. Annual; calyx 10–13 mm. long . . . . . 1. *T. prolifera*.
- 1. Perennial; calyx 4–5 mm. long . . . . . 2. *T. Saxifraga*.

1. TUNICA PROLIFERA (L.) Scop. Fl. Carn. ed. 2. 1: 299. 1772. *Dianthus prolifer* L. Sp. Pl. ed. 1. 410. 1753.

DISTRIBUTION: Introduced from Europe; sparingly established in waste places, New York to South Carolina, and California.

2. TUNICA SAXIFRAGA (L.) Scop. Fl. Carn. ed. 2. 300. 1772. *Dianthus Saxifragus* L. Sp. Pl. ed. 1. 413. 1753.

DISTRIBUTION: Introduced from Europe; established as a roadside weed. Flushing, L. I.; probably elsewhere.

NEW YORK BOTANICAL GARDEN

**DEATH OF MERRITT LYNDON FERNALD**

It is with great regret that we record the sudden death, on September 22, 1950, of Professor Merritt Lyndon Fernald, an editor of RHODORA since its inception, and Editor-in-Chief since 1929.

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